

***FlyBy Math™* Alignment**
2005 Connecticut Mathematics Curriculum Framework

1. ALGEBRAIC REASONING: PATTERNS AND FUNCTIONS: Patterns and functional relationships can be represented and analyzed using a variety of strategies, tools and technologies.

How do patterns and functions help us describe data and physical phenomena and solve a variety of problems?

1.1 Understand and describe patterns and functional relationships.

Performance Standards and Expectations

a. Identify trends and make predictions based upon patterns and data displayed in different formats.

(3) Analyze patterns and data to make generalizations and predictions.

***FlyBy Math™* Activities**

--Predict outcomes and explain results of mathematical models and experiments.

1.2 Represent and analyze quantitative relationships in a variety of ways.

Performance Standards and Expectations

a. Recognize that a change in one variable may relate to a change in another variable.

(1) Describe how a change in one variable relates to a change in a second variable in context.

***FlyBy Math™* Activities**

--Represent distance, speed, and time relationships for constant speed cases using tables, bar graphs, line graphs, equations, and a Cartesian coordinate system.

--Interpret the slope of a line in the context of a distance-rate-time problem.

2. NUMERICAL AND PROPORTIONAL REASONING: Quantitative relationships can be expressed numerically in multiple ways in order to make connections and simplify calculations using a variety of strategies, tools and technologies.

How are quantitative relationships represented by numbers?

2.1 Understand that a variety of numerical representations can be used to describe quantitative relationships.

Performance Standards & Expected Performances

d. Represent ratios and proportions and solve problems using models and pictures.

(3) Use ratios and proportions to solve practical problems such as interpreting maps and scale drawings or identifying probability.

***FlyBy Math™* Activities**

--Represent distance, speed, and time relationships for constant speed cases using tables, bar graphs, line graphs, equations, and a Cartesian coordinate system.

--Plot points on a schematic of a jet route, on a vertical line graph, and on a Cartesian coordinate system to describe the motion of two airplanes.

--Use graphs to compare airspace scenarios for both the same and different starting conditions and the same and different constant (fixed) rates.

2.2 Use numbers and their properties to compute flexibly and fluently, and to reasonably estimate measures and quantities.

Performance Standards & Expected Performances

a. Estimate and compute using models and pictures.

(4) Use estimation to predict results and to recognize when an answer is or is not reasonable.

FlyBy Math™ Activities

--Predict outcomes and explain results of mathematical models and experiments.

3. GEOMETRY AND MEASUREMENT: Shapes and structures can be analyzed, visualized, measured and transformed using a variety of strategies, tools and technologies.

How do geometric relationships and measurements help us to solve problems and make sense of our world?

3.2 Use spatial reasoning, location and geometric relationships to solve problems.

Performance Standards & Expected Performances

b. Determine geometric relationships through spatial visualization.

(1) Plot points on the rectangular coordinate system and estimate and determine the distance between points.

FlyBy Math™ Activities

--Plot points on a schematic of a jet route, on a vertical line graph, and on a Cartesian coordinate system to describe the motion of two airplanes.

3.3 Develop and apply units, systems, formulas and appropriate tools to estimate and measure.

Performance Standards & Expected Performances

a. Solve problems in the measure of time and in the conversion of units of length in the customary and metric systems using specific ratios.

(2) Solve problems involving the conversion of measure of time and elapsed time (days, hours, minutes and seconds).

(3) Estimate and choose appropriate units and tools to measure and solve a variety of problems involving length, perimeter, area, volume, capacity, mass, time, angle and temperature.

FlyBy Math™ Activities

--Calculate and measure the position and time of simulated aircraft. Represent that motion using tables, graphs, equations, and experimentation.

4. WORKING WITH DATA: PROBABILITY AND STATISTICS: Data can be analyzed to make informed decisions using a variety of strategies, tools and technologies.

How can collecting, organizing and displaying data help us analyze information and make reasonable predictions and informed decisions?

4.1. Collect, organize and display data using appropriate statistical and graphical methods.

Performance Standards & Expected Performances

a. Differentiate between numerical and categorical data and their appropriate representations.

(1) Construct and interpret broken line graphs, line plots, bar graphs, picture graphs, simple circle graphs,

FlyBy Math™ Activities

--Represent distance, rate, and time data using tables, line plots, bar graphs, and line graphs.

--Choose among tables, bar graphs, line graphs, a Cartesian coordinate system, and equations to model

and stem and leaf plots and evaluate how well each kind of display represents the features of the data.

aircraft conflicts and predict outcomes.